

**ARCHEOLOGICAL INVESTIGATIONS OF THE 13 ACRE
COASTAL WATER AUTHORITY PROPERTY
ON BUFFALO BAYOU, HARRIS COUNTY, TEXAS**

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For

San Jacinto Battleground Association
and the Coastal Water Authority



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ABSTRACT

From April through June of 2009 archeologists from Moore Archeological Consulting, Inc. (MAC) conducted first a reconnaissance involving metal detecting and then an intensive pedestrian area survey of a 13 acre tract on the southwestern edge of the San Jacinto Battleground State Historic Site along the shore of Buffalo Bayou. This project was conducted with the sponsorship of the San Jacinto Battleground Association (SJBA, also known as the Friends of the San Jacinto Battleground) and the Coastal Water Authority (CWA). The project area is owned entirely by the Coastal Water Authority and can be found on the La Porte (299524) and Highlands (299516) USGS quadrangle maps (Figures 1-4). The proposed investigation satisfies the Texas Antiquities Code requirement and was conducted under Texas Antiquities Permit Number 5233. The results of the investigation are subject to review by SJBA, CWA, and the Texas Historical Commission (THC).

The purpose of this survey was twofold. First, to examine the tract to see if it contained artifacts related to the battle of San Jacinto. Second, to see if the site contained other historic or prehistoric artifacts. However, no artifacts related to either the battle, or other historic nineteenth century or prehistoric resources were recovered during the two phases of the investigation. Nor could any evidence of two prehistoric sites previously recorded within the tract be relocated. Historic debris dating to the twentieth century was observed throughout much of the tract and numerous structural remnants were noted within the property. However, none of this fell within the parameters of the investigation.

The limitations of the reconnaissance, combined with the extensive fill soils and prior impacts from industrial activity greatly reduced the likelihood of this investigation finding any cultural resources. The result is that no recommendations regarding cultural resources as they relate to future proposed construction on or near the tract are being made by Moore Archeological Consulting, nor should any such recommendation be derived or implied by our results. A more extensive archeological investigation than that conducted herein may be necessary before any such recommendations can effectively be made.

CONTENTS

ABSTRACT	ii
TABLE OF CONTENTS	iv
LIST OF FIGURES	iv
INTRODUCTION	1
ENVIRONMENTAL SETTINGS	6
HISTORICAL BACKGROUND	14
PREVIOUS ARCHEOLOGICAL INVESTIGATIONS	21
METHODS	25
RESULTS	31
SYNTHESIS	37
REFERENCES CITED	39
APPENDIX A: Photographs	44
APPENDIX B: Shovel Test Log	47

LIST OF FIGURES

Figure 1. Project Area in Harris County	4
Figure 2. Project Areas on the La Porte and Highlands USGS Quadrangle Maps	4
Figure 3. Detail of Project Areas on La Porte and Highlands Maps	5
Figure 4. Project Area overlaying a 2004 aerial photograph	5
Figure 5. Project Areas over 1930 Tobin aerial photograph	10
Figure 6. Project Area roughly georeferenced over the 1856 Yoakum map	20
Figure 7. Shovel test locations in project area	28

INTRODUCTION

In April of 1836 two armies were marching their way across the Mexican State of Texas (Tejas) towards an eventual collision. The smaller army was made up mostly of volunteers with little or no military experience and a tendency towards fractiousness. Additionally, most of their officers had never seen real combat. The larger force was a mixture of experienced veterans and fresh conscripts led by experienced and confident officers. These armies met on April 20th and 21st at the confluence of the San Jacinto River and Buffalo Bayou (in what is now Harris County, Texas) in a conflict now called the Battle of San Jacinto. On the second day of fighting the mismatched Texas force managed to decisively rout a Mexican army of nearly twice its number. By capturing Mexican General Antonio Lopez de Santa Anna on April 22nd, the Texans managed to force the immediate removal of the remaining Mexican armies and end the revolution in Texas' favor.¹

The Battle of San Jacinto left a wide array of battle related artifacts scattered across the prairie and shoreline of the bayou and river. Recent archeological investigations have confirmed that many of these items remain in place and such investigations are beginning to improve our understanding of the battle and the material culture of the two armies that fought the battle (*Intensive Metal Detecting on Peggy Lake, Harris County, Texas* .Mangum and Moore, 2005. *Archeological Investigations at the NRG Property, Harris County, Texas*. Mangum and Moore DRAFT 2009. Report on general archeological

¹ Santa Anna was also the Mexican President at the time.

investigations at San Jacinto by Mangum and Moore, report in preparation). These recent archeological projects also indicate that many deposits of battle related artifacts remain intact or at least relatively undisturbed.

One of the potential targets for archeological investigation as yet poorly examined is the Texas camp. The Texas army remained here for more than a week and also fought most of the skirmishes on April 20th from the relative safety of the woods in which the camp was placed. If the precise location of the camp is found it is likely to contain numerous camp goods and personal items from the Texans, as well spent artillery and small arms munitions from the Mexican attacks.

From April through June of 2009 archeologists from Moore Archeological Consulting, Inc. (MAC) conducted first a reconnaissance and then an intensive pedestrian area survey of a 13 acre tract on the southwestern edge of the San Jacinto Battleground State Historic Site along the shore of Buffalo Bayou. The initial reconnaissance involved metal detecting in preference to the usual shovel testing as will be discussed in the Methods section of this report. The pedestrian survey resorted to traditional shovel testing for reasons that will be discussed later.

The purpose of this survey was twofold. First, to examine the tract to see if it contained artifacts related to the battle. Second, to see if the site contained other historic or prehistoric artifacts. The project area is owned entirely by the Coastal Water Authority and can be found on the La Porte (299524) and Highlands (299516) USGS quadrangle

maps (Figures 1-4).

This project was conducted with the sponsorship of the San Jacinto Battleground Association, also known as the Friends of the San Jacinto Battleground (SJBA,) and the Coastal Water Authority (CWA). The proposed investigation satisfies the Texas Antiquities Code requirement and was conducted under Texas Antiquities Permit Number 5233. The results of this investigation are subject to review by SJBA, CWA, and the Texas Historical Commission (THC).

MAC staff members Douglas G. Mangum (Project Archeologist), Richard Alba , Sally Moorehead, and John “Randy” Ferguson (Field Supervisor) conducted this investigation under the supervision of Principal Investigator, Roger G. Moore PhD. In addition, MAC volunteer Linda Gorski and volunteer metal detectorist Gregg Dimmick contributed during the reconnaissance level work.

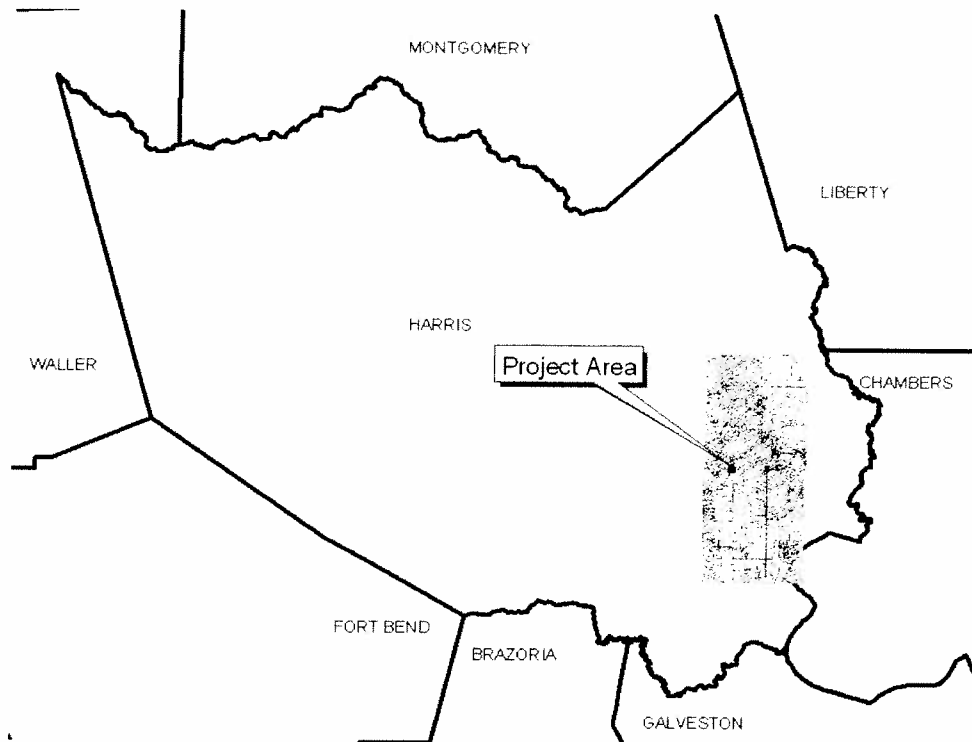


Figure 1: Project Area in Harris County

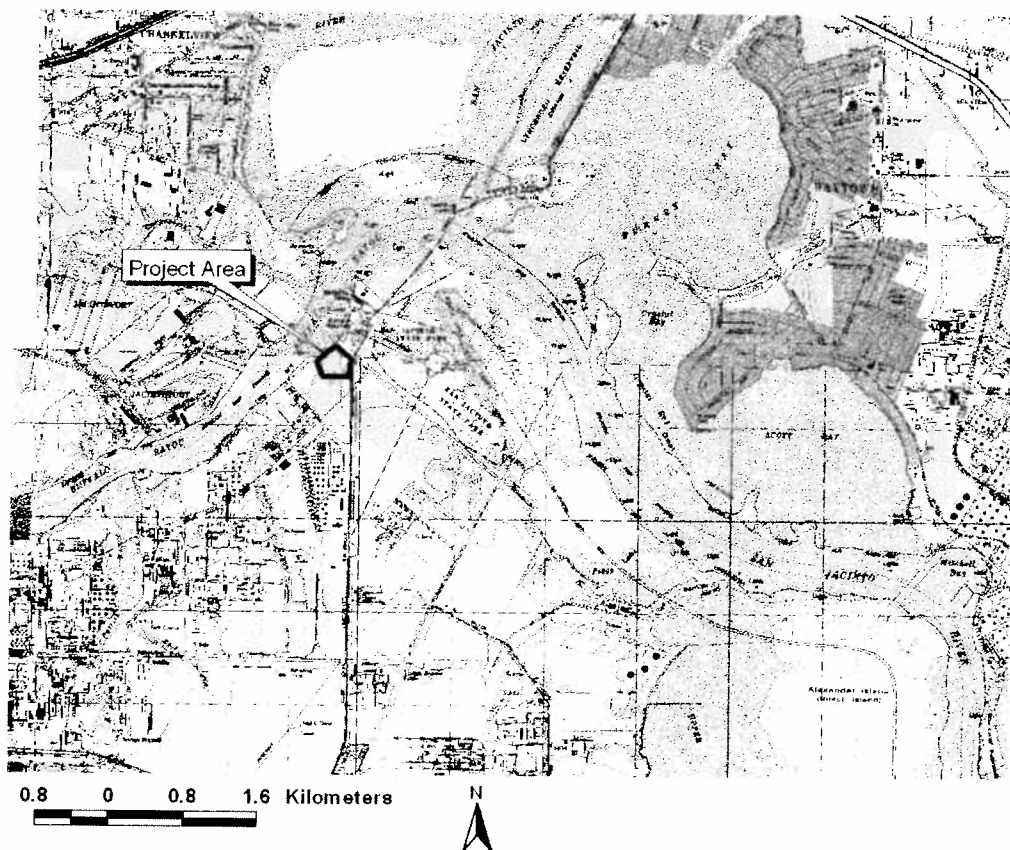


Figure 2: Project Areas on the La Porte and Highlands USGS Quadrangle Maps

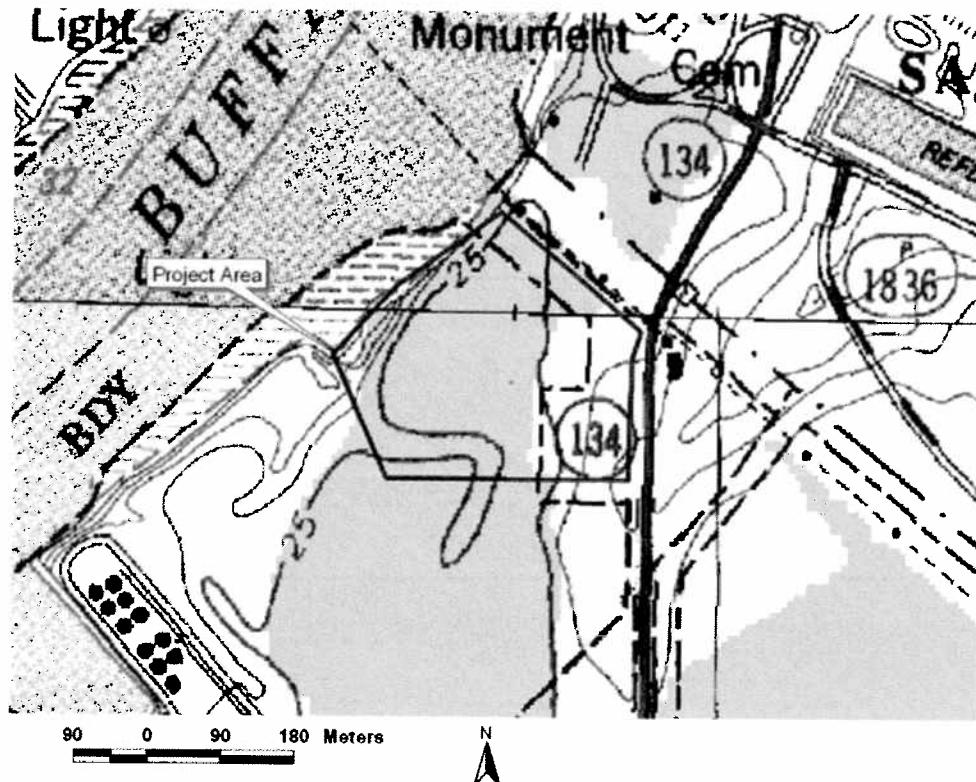


Figure 3: Detail of Project Areas on La Porte and Highlands Maps

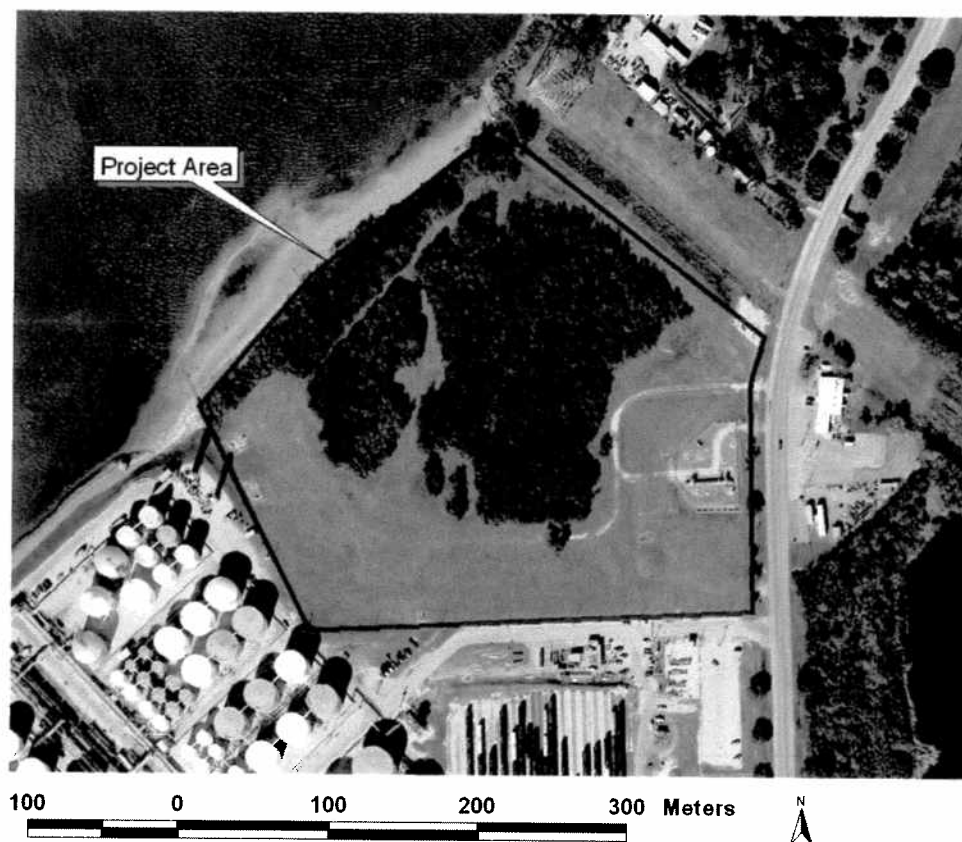


Figure 4: Project Area overlaying a 2004 aerial photograph.

ENVIRONMENTAL SETTINGS

Modern Climate

The modern climate of the Project Area can aptly be characterized as hot and wet for most of the year. The mean annual temperature for the region is about 20 degrees Centigrade, with mean rainfall of 117 centimeters. Summer temperatures average about 34 degrees Centigrade, with temperatures above 38 degrees common during July and August (Carr 1967; St. Clair *et al.* 1975). The average winter temperature is a mild 18 degrees Centigrade. Freezes are infrequent and of short duration, with an average of 271 frost-free days per year. Snow, sleet, and freezing rain are uncommon.

Rainfall varies from 7 centimeters in March to 11 centimeters in December, with July to December rainfall often supplemented by tropical fronts and storms. The rainfall records range from a low of 45 centimeters to a high of 185 centimeters. Prevailing winds are usually from the southeast except during the winter months when 'Northers' sweep into the area.

Modern Flora and Fauna

Southeast Texas is within the Austroriparian biotic province, near its western boundary with the Texan province (Blair 1950:98-101). Pine-hardwood forests on the eastern Gulf coastal plain mark this boundary, which is set by available moisture levels. The Project Area is situated within the pine-oak forest subdivision of the Austroriparian province and includes portions of the coastal prairie within its western limits (Tharp 1939).

Grasses within the coastal prairies and marsh vegetation area are described from a range-management perspective in Hoffman et al. (nd: 45). This 10,000,000-acre area consists of 9,500,000 acres of gulf prairies and 500,000 acres of gulf marshes. The regional vegetation of the coastal prairies is characterized as follows:

The principal grasses of the prairies are tall bunchgrass, including big bluestem (*Andropogon gerardi*), little bluestem, seacoast bluestem (*Schizachyrium scoparium*, var. *littorus*), Indiangrass, eastern gamagrass (*Tripascum dactyloides*), switchgrass, and gulf cordgrass. Seashore saltgrass is common on moist saline sites. Grazing pressures have changed the composition of the range vegetation so that the grasses now existing are broomsedge bluestem, smutgrass, threeawns, tumblegrass and many other inferior grasses. The other plants that have invaded the productive grasslands are oak underbrush, mcartney rose, huisache, mesquite, pricklypear, ragweed, bitter sneezeweed, broomweed, and many other unpalatable annual weeds [Hoffman et al. nd: 45].

The dominant floral species of the pine-oak forest subdivision of the Austroriparian biotic province include loblolly pine (*Pinus taeda*), yellow pine (*Pinus echinata*), red oak (*Quercus rubra*), post oak (*Quercus stellata*), and blackjack oak (*Quercus marilandica*). Hardwood forests are found on lowlands within the Austroriparian and are characterized by such trees as sweetgum (*Liquidambar styraciflua*), magnolia (*Magnolia grandiflora*), tupelo (*Nyssa sylvatica*), water oak (*Quercus nigra*) and other species of oaks, elms, and

ashes, as well as the highly diagnostic Spanish moss (*Tillandsia usneoides*) and palmetto (*Sabal glabra*). Swamps are common in the region.

Blair (1950) and Gadus and Howard (1990:12-15) define the following mammals as common within the Austroriparian province: white-tailed deer (*Odocoileus virginianus*), muskrat (*Ondatra zibethicus*), raccoon (*Procyon lotor*), coyote (*Canis latrans*), opossum (*Didelphis virginiana*), *Scalopus aquaticus*, *Pipistrellus subflavus*, *Lasiurus borealis*, *Sciurus niger*, *Sciurus carolinensis*, *Glaucomys volans*, *Geomys breviceps*, *Reithrodonomys fulvescens*, *Peromyscus leucopus*, *Oryzomys palustris*, cotton rat (*Sigmodon hispidus*), packrat (*Neotoma floridana*), eastern cottontail (*Sylvilagus floridanus*), and swamp rabbit (*Sylvilagus aquaticus*). Bison (*Bison bison*) may have been present on nearby grasslands at various times in the past (Gadus and Howard 1990:15).

Common land turtles include eastern box turtle (*Terrapene carolina*) and *Terrapene ornata*, while snapping turtle (*Chelydra serpentina*), mud turtle (*Kinosteron* spp.), river cooter (*Chrysemys concinna*) and diamondback terrapin (*Malaclemys terrapin*) comprise common water turtles. Common lizards include *Anolis carolinensis*, *Sceloporus undulatus*, *Leiopisma laterale*, *Eumeces laticeps*, *Cnemidophorus sexlineatus*, and *Ophiosaurus ventralis*. Snakes and amphibians are also present in considerable numbers and diversity.

The resources provided by river-influenced estuarine and marsh environments were undoubtedly of great importance to the littoral residents of southeast Texas. These resources are summarized by Gadus and Howard (1990:12-15). Estuarine fish resources cited by Gadus and Howard include sand trout (*Cynoscion arenarius*), spotted sea trout (*Cynoscion nebulosus*), Atlantic croaker (*Micropogon undulatus*), striped mullet (*Mugil cephalus*), southern flounder (*Paralichthysis lethostigma*), shortnose gar (*Lepisosteus platostomus*), channel catfish (*Ictalurus punctatus*), freshwater drum (*Aplodinotus grunniens*), red drum (*Sciaenops ocellata*), and bluegill (*Lepomis macrochirus*) and other sunfishes. Common shellfish include Rangia (*Rangia cuneata*), *Macoma* spp., dwarf surf clam (*Mulinia lateralis*), oyster (*Crassostrea virginica*), *Vioscalba louisianae*, and olive nerite (*Neritina [Vitta] reclinata*). Arthropods, such as shrimp and crab, are also numerous and highly productive.

Area marshes replete with plants such as cordgrasses (*Spartina* spp.), reeds (*Phragmites* spp.), giant millet (*Setaria magna*), and bullrushes (*Scirpus* spp.) would have formed a highly attractive and bountiful magnet for waterfowl (Gadus and Howard 1990).

Currently the project area has a mixture of industrial features, mown grass, and dense wood. The wooded areas make up most of the middle and shoreline portions of the tract while the manicured segments fill out the rest. The industrial features are primarily along the eastern and southwestern boundaries of the tract. Historically this tract was a part of the prairie and the edge of the riparian zone along the edge of Buffalo Bayou.

Review of the oldest available aerial imagery from a 1930 Tobin aerial photograph (Figure 5) shows that the project area was, at that time, largely free of trees with the exception of a few along the shoreline. It cannot be determined if this was entirely the natural state as the tract had, by that time, already been impacted by the presence of a steel mill within the project area. The tract retains the footprint and footings of numerous structures scattered across the bulk of the tract. However, this earliest aerial photograph is probably as close to imagery of the ‘natural state’ of the tract as is available.

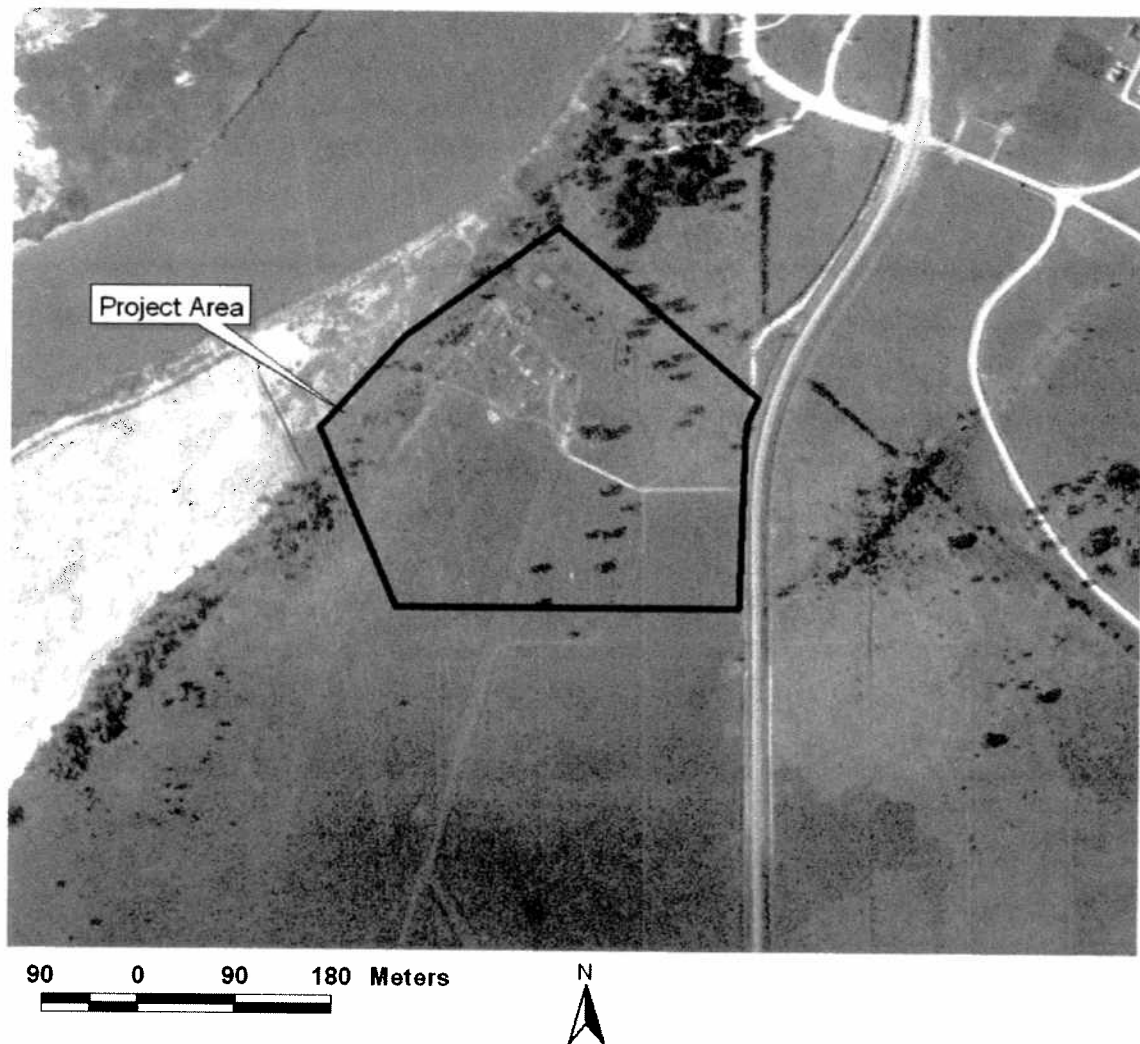


Figure 5: Project Areas over 1930 Tobin aerial photograph.

Soils and Geology

Geologic formations of the Upper Texas Coastal region are Pleistocene in age. The Gulf Coastal Plain is the result of a series of sediment wedges, both marine and continental, created over the last 65 million years (Spearing 1991). Their presence is the result of the rise and fall of sea level and the fluvial and deltaic deposits of Texas rivers.

Combinations of these activities have contributed to the advancement of the Gulf Coast shoreline and the Gulf of Mexico. The geological activity that created the Texas coastal floodplain over the last 65 million years has added 250 miles of land to the United States (Spearing 1991).

The surface geology of the Gulf Coastal Plain is referred to as the Lissie Formation of the Houston Group. The Lissie Formation is a series of Pleistocene-age deposits located stratigraphically above Pliocene-age sands and gravels. Extending from the Sabine River to the Rio Grande, the Formation fans out into a 20-mile wide belt north of the Beaumont Plain (Fields et al. 1983). It retains deltaic and fluvial characteristics from its composition of river materials and of materials deposited from continental deterioration carried by streams across the coastal plain (Wheeler 1976).

Evidence from recent archeological investigations conducted by Moore Archeological Consulting (publication pending) indicates that there are locations within the park that are covered with fill soils. Some of these soils are the result of dredge spoil being disposed of within the park while others likely date from the construction of the monument in the 1930's. Based on this study it was anticipated that such fill could be present in some

Hydrology

The major water source impacting the tract is Buffalo Bayou. The bayou makes up the western boundary of the project area. It is apparent that use of the bayou as a shipping channel and the wakes this produce have caused extensive erosion along this shoreline leaving a steep banked drop-off down to the water's edge. The site is also impacted by the San Jacinto River in that the river's tidal aspect influences the level of Buffalo Bayou at this point in its channel.

It should be noted that subsidence resulting from oil and water extraction had caused loss of elevation across the entire area. This subsidence has amounted to roughly 8-10 feet in topographical change. This has affected the project area by lowering it closer to the tidal influenced Buffalo Bayou and it is likely that a large portion of the shoreline as it was in 1836 has long since been lost to wake action and erosion processes. There are no streams or natural water sources within the actual project area.

HISTORICAL BACKGROUND

The Project Area is within the Southeast Texas Archeological Region, which has been recently summarized by Patterson (1995). Other recent prehistoric summaries equally pertinent to the prehistory of the Brazoria-Fort Bend County area include Ensor (1991), and Moore and Moore (1991). The reader is referred to these works for detailed data on the prehistory of this region.

Previous investigations in Southeast Texas have demonstrated that prehistoric people occupied this area as early as 12,000 years ago. All through prehistory the inhabitants were nomadic hunter-gatherers. Ensor (1990) has proposed a prehistoric cultural sequence of periods for Southeast Texas which are as follows: Paleo-Indian (10,000-8,000 BC), Early Archaic (8,000-5,000 BC), Middle Archaic (5,000-1,000 BC), Late Archaic (1,000 BC – AD 400), Early Ceramic (AD 400-AD 800), and Late Ceramic (AD 800-AD 1750).

Evidence for prehistoric occupation of Southeast Texas is scarce in the Paleo-Indian period, and indeed, is rather ambiguous through the Middle Archaic period (Patterson 1983; Aten 1983:156-157). However, although most previously recorded sites date to the Late Archaic and Ceramic periods, it is probable that earlier dating sites have been lost to erosion, channel cutting, and, particularly in the case of very early sites, to rising sea level. In cases where early-dating artifacts have been found, such as Wheat's (1953) finds of projectile points dating from the Paleo-Indian through Middle Archaic periods at Addicks Reservoir in western Harris County, the materials occur in deposits with poor

contextual integrity.

Sites dating from the Late Archaic through the Ceramic periods are much more commonly found in the project vicinity. During the late Archaic period, modern climatic conditions evolved, sea level rose and stabilized, and coastal woodlands expanded. Aten (1983) hypothesizes that an increase in population and the establishment of seasonal rounds, including regular movement from littoral to inland areas occurred during the Late Archaic period. Particularly relevant to the prehistory of the Project Area are Hall's (1981) data from the Allens Creek project in nearby Austin County, Texas. Excavations of a large cemetery there suggest a Late Archaic trade system that linked Southeast Texas to Central Texas and areas eastward into Arkansas. The excavation of other, smaller cemeteries in this section of the Brazos River drainage, including some in Fort Bend County, has yielded similar evidence.

Lawrence Aten (1983) has proposed that ceramics were introduced in the aboriginal artifact assemblage on the Upper Texas Coast at AD 100. Ensor places the beginnings of the Early Ceramic period at AD 400, which may be more applicable for areas inland from the coastline. The Early Ceramic period is characterized by a continued growth in population levels. Ensor (1991) places the beginning of the Late Ceramic at AD 800, which coincides with the introduction of the bow and arrow. A plain sand-tempered pottery dominates throughout both parts of the Ceramic era. Story et al. (1990) has defined the Mossy Grove Cultural Tradition for Late Prehistoric cultures in Southeast Texas with sandy paste pottery being the principle diagnostic artifact type.

European settlement did not begin to seriously disrupt aboriginal habitation in the areas inland from the Upper Texas Coast until after AD 1700 (Patterson 1995; 249). European diseases, probably introduced by explorers and early traders, did begin to have impacts as early as AD 1528. At least seven epidemics were recorded among the tribes of the study area between that date and AD 1890 (Ewers, 1974).

The Project Area falls entirely within the original land grant of Arthur McCormick (map provided by Texas General Land Office dated 1824). He was one of Stephen F. Austin's "Old Three Hundred" colonists. Arthur drowned while attempting to cross Buffalo Bayou in 1824 or 1825 and his land was held by his wife Margaret (Peggy) McCormick and their sons. The family raised cattle on the land (Henson, Handbook of Texas Online). This was the ownership status of the land at the time of the battle.

Historic maps indicate that at some point in the early twentieth century there was a steel mill on part or all of the current project area. Indications of the presence of this mill first appear on the Empire Gas and Fuel Co. "Survey & Divisions of Tracts of Land in the Ross & McCormick Leagues in Harris County, Texas" map dated December 11th, 1917. This map clearly indicates that there was a steel mill within an area that includes all of the current project area in addition to some property towards the southeast. An earlier Corps of Engineers map dated 1905 does not show any indication of this mill. Another map generated for the USGS in 1920 shows a single large structure within the tract and it is likely that this either represents the largest of the mill buildings or is a generalized

representation of the mill as a whole. The earliest aerial photograph that includes the project area was taken by Tobin in 1930. This aerial shows a series of what appear to be structural foundations and open square tanks filled with water. As yet our research has revealed no other historical records to further support the presence of a steel mill within the project area. However, taken together these maps and aerials suggest that a steel mill was constructed along Buffalo Bayou sometime between 1905 and 1917 and that this same facility had been abandoned and probably largely demolished by 1930. It is possible that this mill was related to wartime production of steel (for WWI) but historical records would need to be discovered to support such a supposition.

Summary of the Battle of San Jacinto

This summary of the battle will be intentionally brief and basic. Many of the aspects of the battle are subject to widely divergent interpretation. The results of prior MAC investigations have already indicated that some elements of the battle occurred somewhere other than commonly accepted. They have also discredited some generally believed notions. Those wishing more extensive discussions of the battle can refer to such books as “Eighteen Minutes” (Stephen L. Moore, 2004), “The Day of San Jacinto” (Frank X. Tolbert, 1959), or any of numerous other sources.

On April 20th, 1836 the Mexican forces under Santa Anna met those of General Sam Houston at the confluence of the San Jacinto River and Buffalo Bayou. On that first day the Mexican forces made an initial foray towards the line of trees in which the Texans were camped only to be driven away by cannon and rifle fire. There followed a dual

between the one Mexican cannon and the two Texan cannons which lasted some time. An effort by the Texas cavalry to capture the Mexican cannon as it was being moved led to a brief skirmish between the cavalry of both sides. A covering force of Texan infantry allowed their cavalry to withdraw to the camp. Meanwhile the Mexican forces had removed some distance across the prairie and set up a camp and defensive breastworks made up mostly of luggage, saddles, and brush. This was the status at the end of the first day.

Early in the morning of April 21st, reinforcements under the command of Mexican general Martin Perfecto de Cos reached Santa Anna's camp after an exhausting forced march and were detailed to the right of the Mexican lines. After the Texans did not make an expected dawn attack, Santa Anna determined that no further hostilities need be expected, allowed his men to stack arms and rest, and planned for an attack on April 22nd. However, Sam Houston and his men determined to make an afternoon attack and at around 3 pm began to form up. A piece of low ground (commonly referred to as the swale) allowed the Texas forces to arrange themselves out of sight of pickets and begin the march upslope towards the Mexican defenses. Regiments under the commands of Sherman, Burleson, and Millard made up the left, center, and right wings of the Texan forces respectively. Cavalry under Lamar took the extreme right and the artillery advanced in the middle. The Texan forces caught the Mexican army largely unprepared for attack and after approximately 20 minutes of combat they largely broke and ran. In the ensuing chaos roughly half of Santa Anna's force was killed and most of the other half was captured. Santa Anna himself was captured on April 22nd.

Proposed Project Area in Relation to Battlefield Occurrences

The project area falls within an area that may have been part of the southern end of the Texan camp. As such it is possible that camp and personal items lost or damaged may have been left behind. Furthermore, the skirmishing on April 20th would likely have left a scattering of spent musket, rifle, and artillery munitions across the area. Because the project area has never been a part of the San Jacinto Battleground State Historic Site it has never been part of the formal interpretation of the battle. However, there is potential that this is an omission rather than an indication that no battle related occurrences took place within the project area.

In addition to the camp, the project area is also close to the original location of the Harrisburg Road. This road provided accessibility into and out of the battlefield as well as being a much frequented route before and for long after the battle. An examination of the map from Henderson K. Yoakum's "History of Texas: From its First Settlement in 1685 to Its Annexation to the United States in 1846" (1856) roughly georeferenced to lay over modern imagery indicates that the Harrisburg Road did pass fairly close to the project area (Figure 6). This road eventually became what is today Independence Parkway (until recently, and for most of the twentieth century this was called Battleground Road). The modern road makes up the eastern boundary of the project area while the original passed approximately 100 meters further to the east.

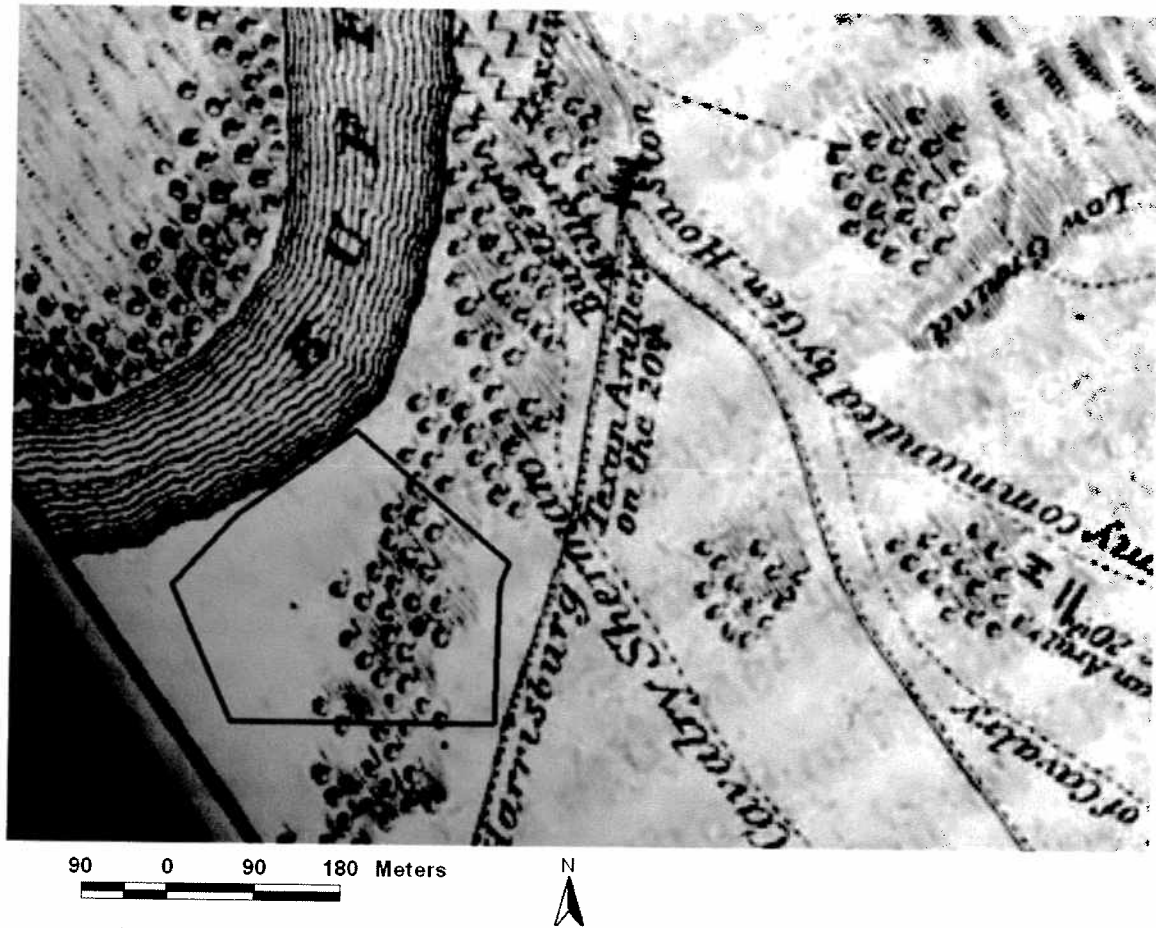


Figure 6: Project Area roughly georeferenced over the 1856 Yoakum map.

PREVIOUS ARCHEOLOGICAL INVESTIGATIONS

No previous archeological surveys involving metal detecting have ever occurred within the current project area. Metal detecting surveys of the same sort have been conducted by Moore Archeological Consulting within and adjacent to the park (*Intensive Metal Detecting on Peggy Lake, Harris County, Texas* .Mangum and Moore, 2005. *Archeological Investigations at the NRG Property, Harris County, Texas*. Mangum and Moore DRAFT 2009 and an as yet untitled report on general archeological investigations at San Jacinto by Mangum and Moore in preparation). However, at least several prior archeological investigations involving some or all of the project area have occurred.

The earliest of these prior investigations was conducted sometime between 1956 and 1959 by W. B. Neyland as part of the Galveston Bay Survey. This investigation identified the prehistoric sites 41HR33 and 41HR104 along the shoreline of the project area. Little recordation of what was found during this survey can be found. It is assumed that these were likely shell midden type sites of the sort common in the area, though this would need to be confirmed.

The next recorded investigation was conducted by Roger Moore (then working for Heartfield, Price, and Greene, Inc.) in 1986. This survey indentified a historic site (41HR576) which occupied virtually the whole of the current project area. However, the site was a mixture of twentieth century and late nineteenth century debris. None of the artifacts recovered suggested any connection to the battle and none predated the Civil War era. During this survey efforts were made to relocate the prehistoric sites 41HR33

and 41HR104. No remains of the sites were discovered though it was noted that significant erosion of the natural shoreline along Buffalo Bayou had occurred. It is likely that the sites were lost as a result of this cause.

The last two known surveys involving some or the entire tract were conducted under the auspices of the United States Army Corps of Engineers in 1994 and 1997. Details on why these surveys were conducted or what was found were not obtainable for this report. However, based on site records it does not appear that any new sites were identified or recorded, nor was any new information submitted regarding sites 41HR33, 41HR104, or 41HR576 suggesting that no relocation or examination of these sites occurred during these investigations.

There are numerous cultural resource sites (both historic and prehistoric) within one kilometer of the current project area. This is based on a review of the Texas Archeological Sites Atlas. Among these is the battlefield itself (41HR115), three historic scatters (41HR316, 41HR317, and 41HR865) and the mixed prehistoric/historic scatter (41HR488). There is also an extant cemetery (the Habermehl Cemetery recorded as C201). However, none of these fall within the boundaries of the current investigation limits.

Hicks and Company and Moore Archeological Consulting have conducted some of the most recent investigations in the general vicinity of the project area. These investigations were oriented entirely towards recovering battle-related artifacts through the use of metal

detecting. The results of the Hicks investigations were mixed. According to the Hicks report (Karbula, et al., 2004) report, “44 battle or target period artifacts were recovered.”

A follow-up investigation of the same general area was undertaken by Moore Archeological Consulting between April and August of 2005 and was conducted in coordination with Texas Parks and Wildlife Department (Mangum and Moore, 2005). This investigation looked at a larger area of the tract along the bluff overlooking Peggy Lake which is owned by the Port of Houston. This tract covers almost the entire length of Peggy Lake shoreline between the San Jacinto Battleground State Historic Site and the current Project Area. As such it was hoped that the investigation would uncover evidence of the retreating Mexican army in the aftermath of the battle. Metal detecting, utilizing similar methodology to the current investigation, was conducted on five block areas which totaled approximately 2.8 acres in size. A total of 27 battle-related artifacts were found, consisting of 21 musket balls, 1 buckshot pellet, 1 percussion cap, 2 cartridge box buckles, 1 lead strip, a crudely decorated copper item and 3 pieces of curled sheet lead. No significant patterns were observed either in the individual blocks or in the area of investigation as a whole. However, as hoped, the results of this project did suggest that the retreat phase of the battle had continued across the tract along Peggy Lake.

Another recent archeological investigation was conducted at the NRG Texas property roughly two kilometers east-southeast of the current investigation (Mangum and Moore, report in preparation). This project determined that a large group of Mexican soldiers made it to a far copse of trees, disarmed, and surrendered as a group. A linear

concentration of more than 600 battle related artifacts (made up largely of dropped musket balls) were recovered. These artifacts were spread out along a line 180 meters long and 20 meters wide. The artifact scatter followed a tree line which is evident in the 1930 Tobin aerial photograph. The primary connections between this project and the current investigation are twofold despite the physical distance between them. First, the NRG investigation refined the methodology used during the reconnaissance. Second, it provided a rich body of definitively battle related Mexican artifacts to compare to items, if any, recovered during the current investigation.

METHODS

The methodology utilized during the reconnaissance phase of this investigation was largely based on previous fieldwork conducted by MAC within the boundaries of the San Jacinto Battleground State Historic Site, along the shoreline of Peggy Lake, and at the NRG property (reports previously mentioned). However, because the metal detecting never went beyond the reconnaissance phase and because no battle related or potentially battle related artifacts were recovered, little detail of the standard battlefield methodology will be discussed and instead the focus will be on how the reconnaissance was conducted. Specifically the reconnaissance involved the participation of a volunteer metal detectorist (Gregg Dimmick, M.D), a MAC volunteer (Linda Gorski) and a MAC staff member (Project Archeologist Douglas Mangum). The volunteers were experienced and trusted veterans of other San Jacinto-related projects. All accessible areas of the project area were examined with the metal detector. An effort was made to maximize the coverage of the detector sweeps throughout the area while also focusing enough to insure that any possible concentrations of artifacts were not missed. All metal detector hits were dug and examined.² Excavations to examine metal detector hits were seldom larger than the size of standard shovel tests and were refilled immediately. In addition, random shovel probes were dug in an attempt to better understand the soils within the project area. These probes were also no larger than shovel tests and were refilled immediately. Because the investigation was focused on the recovery of metal artifacts the soils from these investigations were not screened but rather were examined as they were removed with the

² **Basic definitions:** “*Metal Detector Hit:*” a place where the metal detector rings out and at which we therefore excavate to identify the metallic item [versus] “*Metal Detector Location:*” a metal detector hit that yields, upon excavation, a meaningful artifact as defined herein. Every “Metal Detector Location” will be fully documented as described below, whereas “Metal Detector Hits” that do not produce meaningful artifacts will only be minimally documented, again as described below.

metal detector. It was intended that should any battle related or potentially battle related artifacts be discovered during the reconnaissance that its location would be initially pinpointed with a WAAS enabled GPS unit and marked with a pin flag. Then a total station would be used to more precisely place the location of the recovery. However, no such artifacts were recovered and so the total station was not used.

As a result of the reconnaissance at the CWA tract in May of 2009 it was determined that large parts of the tract have significant deposits of artificial fill soils. Specifically those portions outside of the wooded parts of the tract were deeply buried in this fill soil. Because of the nature of the investigation (informal shovel probes looking for specific artifacts) the precise depth or horizontal extent of this fill could not be determined. However, based on the examination of the fill soil at its boundaries with the extant natural surfaces within the wooded portions of the tract, it seems likely that this fill layer ranges from 30 centimeters to 1 meter in depth (PHOTOGRAPHS).

Because the deep layer of fill in the open areas made shovel testing survey unfeasible, and because no battle related, potentially battle related, or even historical artifacts were recovered from the natural soils in the wooded portion of the project area, it was determined that the remainder of the investigation should follow more standard pedestrian survey methods described below.

The intensive, area pedestrian cultural resources survey covered 100% of the wooded portion of the survey area where natural soils were at or close to the surface. The survey was conducted by the Principal Investigator and/or Project Archeologist and one field

assistant. The survey was conducted in accordance with prevailing standards accepted by the State, the Council of Texas Archeologists, and Section 106 regulations.

All areas of exposed soil were examined for surface exposure of cultural remains and features. Surface visibility varied greatly throughout the Project Area, from 100%-0%. Much of the area examined was relatively clear of groundcover while other locations were invisible due to dense brush. All areas of exposed soil were examined for surface exposure of cultural remains and features. Shovel testing was conducted in an attempt to identify buried archeological deposits, features, and sites; small (30 cm²) shovel tests were excavated systematically across the Project Area.

The crew excavated all shovel tests in 10-cm (3.9") arbitrary levels and screened the soils through .6 centimeter (1/4") hardware cloth. Soils that were too compact or clayey to sieve through hardware cloth were broken up by hand. All materials were carefully examined for cultural artifacts. Location, size, depth, and all other information for each shovel test were recorded on standardized Moore Archeological Consulting shovel test forms. Shovel tests were immediately backfilled. The UTM locations of all shovel tests were recorded utilizing handheld, recreation-grade GPS units (Magellan GPS 315s and Magellan Meridian Platinum [WAAS Enabled]). The location of each shovel test was then plotted on a map of the Project Area (Figure 7).



Figure 7: Shovel test locations in project area.

Based on the soils described in the county soil manual it was not anticipated that deep reconnaissance (in the form of backhoe trenching) would be necessary for this project. As a result no backhoe trenching was proposed for the investigation.

Any locality that produced either prehistoric or historic cultural remains would be recorded on State of Texas archeological site forms for submission to Texas Historical Commission. In addition to form information, photographs, plan and stratigraphic

sketches and measured drawings and crewmembers' daily field notes documented sites and features.

Investigations at any identified site or feature sought to determine site boundaries, depth, nature of the archeological deposits, and the site's state of preservation as far as was possible with shovel testing. Archeological sites and cultural features were photographed, mapped in plan view and plotted with accuracy on USGS quadrangle maps and project maps. If possible, a recommendation for State Archeological Landmark and National Register of Historic Places eligibility was made.

For buried or obscure sites, boundaries were delineated through shovel test excavation. Where necessary, shovel tests were dug at 5 or 10-meter (16.5' or 33') intervals radially, generally in the cardinal directions from the presumed center of each site until no further artifacts were encountered in two successive units (or until the boundary of the Project Area was reached). The site boundaries on each radius were presumed to lie between the last artifact-producing test and the first sterile unit. Information on the depth and nature of the deposits was derived from shovel test results, as well as available surface observations. No prehistoric resources were found during this investigation.

The collection policy for this survey was that (1) we would retain any prehistoric or potentially pre-1870 historic materials recovered from shovel tests or other subsurface investigations that did not prove, after extensive site delineation tests, to be isolated

artifacts³, and (2) for surface materials: only diagnostic cultural materials from the above periods would be collected and retained.

Photographs were taken of the Project Area and general landforms within the tract. Photographs were also taken of any feature that stood out (i.e. mounds, structure remnants, etc.) and of localities that could not be dug for various reasons. Photograph direction, subject, photographer name, and dates were recorded on a standard Moore Archeological Consulting photographic log.

³ These isolated artifacts, such as a single flake surrounded by multiple, negative shovel tests, will be reburied and the isolate will not be recorded as an archeological site.

RESULTS

An initial reconnaissance conducted by the project archeologist on April 27, 2009 determined several things about the project area. The first was that it was likely that fill soils layered much of the project area outside of the wooded portions of the tract. The second was that the wooded portion appeared to be lower and to retain natural soils (whether truncated or original surface could not be determined). Finally, during the reconnaissance it was noted that extensive and large concrete foundations and rubble were prevalent within much of the wooded portion of the tract (see Appendix A). These included what appeared to be concrete lined pits, concrete footings of the sort common for water towers, and other large scale structural remnants. The concrete had significant shell material, possibly used as aggregate. From this it was indicated that, at some point in the past, the tract had had some form of industrial activity going on within its boundaries. It is almost certain that these structural remnants are directly related to the steel mill discussed in the Historical Background section of this report. It was suggested based on these observations that metal detecting might be difficult depending on the amount of industrial metal debris scattered across the site. This is particularly the case if the steel mill produced significant amounts of slag metal, at least some percentage of which would have ended up scattered around the mill property.

During the metal detecting reconnaissance conducted in May 2009 it was confirmed by the use of shovel probing that the open areas of the project area were deeply layered in artificial fill soils. These soils were mostly dense, dry clays soils with numerous inclusions of gravel, concrete rubble, brick, and modern debris. Because of the dense

nature of these soils it was not possible to penetrate them beyond 30-40 centimeters below surface. As a result it was not possible to determine the actual depths of these fill soils at any given location. However, it was observed that at the transition from open area to woods, the surface suddenly dropped off to a lower level where natural soils were noted. Examination of the drop-off edge revealed a profile of dense clay soils lying directly atop the natural soils. Observations made at numerous of the drop-off locations throughout the project area evinced a range of depths for the fill soils between 30 cm to one meter (100 cm).

During the metal detecting reconnaissance in May 2009, no battle related, potentially battle related, or historical metal artifacts were recovered within the project area. Metal detecting of the open areas resulted in the recovery of numerous items of modern metal debris from within the artificial fill layers previously discussed. Because it was not possible to penetrate these fill soils either with the metal detector or with the shovel, it was also not possible to determine definitively whether or not such artifacts might remain below the artificial fill soils. The only possibility for overcoming this problem would be stripping these artificial soils away to allow the metal detector free access to the natural soils below, and such work was beyond the scope of this investigation. However, once it was confirmed that the fill soils prevented effective metal detecting in the open areas of the tract the remainder of the reconnaissance was spent in extensive examination of the wooded portions of the tract.

Continuation of the metal detecting reconnaissance within the wooded areas confirmed the previous observations that the soils within these areas seemed to be natural deposits as opposed to the artificial fill soils in the open areas. As previously mentioned it was not possible to determine if this was a natural or truncated surface. Probes into the deposits revealed soils akin to the Lake Charles clay soils anticipated based on the county soil survey (Wheeler, 1974). This part of the investigation also produced no battle related, potentially battle related, or historical metal artifacts. A relatively small number of metal items were recovered within these areas, but all were immediately identifiable as modern debris and slag metal. Metal detecting could not be done in areas close to the previously mentioned areas where concrete foundations and rubble were present. This was in part because much of this concrete had metal reinforcing, but also because it was quickly noted that extensive metal debris was present in large amounts within the vicinity of these structural remnants. Efforts to examine sufficient numbers of these latter items confirmed that they were of recent origin and almost certainly related to the industrial activity the structural remnants represented. As suspected, many of the metal detector hits in this area were metal slag. All diagnostic items of debris recovered (but not collected) by use of the metal detector during this reconnaissance were of early to middle twentieth century. Nothing that predated this date range was observed or recovered.

As previously mentioned in the Methods section of this report, the results of the metal detecting reconnaissance led to a determination that all further archeological investigation within the project area would follow the more typical intensive pedestrian survey methodology of random shovel testing. As the open areas had already been determined to

be covered in deep layers of dense fill soils it was also decided to focus all further investigations in the wooded portions of the project area where natural soils deposits could be reached by shovel testing. It was also determined to examine the shoreline at low tide in an effort to see if the previously recorded prehistoric sites could be relocated.

The intensive pedestrian survey began on June 18th and concluded on June 22nd. Work began with an initial examination of the shoreline along Buffalo Bayou (at low tide) in an attempt to relocate either 41HR33 or 41HR104. This work included both an examination of the shoreline itself and also of the cut-bank above the shoreline. No sign of either prehistoric site could be located and clear evidence of extensive and ongoing erosion was noted. It was felt by the crew that this erosion had almost certainly removed the remnants of the two historic sites over the last five decades since they were originally recorded in the late 1950's.

The survey continued with the excavation of a series of 20 shovel tests along the high bank above Buffalo Bayou and within the other wooded segments of the overall project area (Figure 7, Appendix B). With two exceptions (Shovel Tests (ST) 6 and 15) all shovel tests appeared to have been excavated into natural, intact soils and all reached loamy clay or clay at the surface or within 10 cmbs. All save the disturbed examples (ST 6 and 15) were excavated to a minimum depth of 30 cmbs with most reaching 45-50 cmbs before being terminated. Although seven of the shovel tests (ST 1, 3, 5, 8, 11, 17, and 18) located items ranging from rounds nails and slag to glass and ceramic fragments, it was determined that all of these items dated to the early to middle twentieth century.

Some of these items may relate to the previously recorded historic site 41HR576, but none fell within the collections policy of this survey.

Further examination of the structural remnants within the wooded tract resulted in several observations. First; extensive historic debris dating to the twentieth century was present on the surface in and adjacent to where the structural remnants were. As this material clearly did not fall within the collections policy for this survey they were not collected but simply noted. Second; some of the structural remains were obviously foundation piers for buildings that once stood within the project area while others were just random blocks of concrete of varying sizes and composition. Some of the smaller blocks had Rangia shell or brick temper suggesting somewhat early twentieth century construction. Third; on one of the large foundation piers there was part of a date written with finger while the concrete was wet. The date shown was “Aug. 19” with the portion of the concrete immediately after the “9” being broken off (see Appendix A). It is likely that the broken off portion would have completed the year the foundation was laid, but it is also possible that it was laid down on August 19th of an indeterminate year. The prior inference is supported by the previous identification of the site as most likely relating to a steel mill constructed between 1905 and 1917.

In the context of the overall project area the final result were as follows. No battle related or potentially battle related cultural resources were discovered during the investigation. In fact, no historical artifacts that could be dated to any point within the nineteenth century were recovered. No prehistoric cultural resources were recovered either relating to the

previously recorded prehistoric sites along the shore of Buffalo Bayou or from prehistoric sites not previously recorded. Although debris dating to early and middle portions of the twentieth century (possibly related to those artifacts recovered as part of the previously recorded site 41HR576) was observed both on the surface and in upper levels of the shovel tests, none were collected. Finally, it was clear that some sort of industrial activity, almost certainly the steel mill previously discussed, occurred within the project area sometime in the early twentieth century. Later impacts to the site including the dumping of fill soils across much of the tract.

SYNTHESIS

Based on the historical record it seems likely that the project area examined as part of this archeological investigation has some potential to be considered a part of the San Jacinto Battleground State Historic Site. Considering the relatively close proximity of recorded elements of the battlefield to the project area there is certainly potential that some battle related activity occurred within the tract. However, no evidence of such activities was discovered during this investigation. It is possible that such evidence remains beneath the deep layers of fill noted within much of the project area, but an examination of these soils was outside of the scope of this investigation.

Furthermore, based on the archeological record, it seems that the project area once included at least two prehistoric sites and one historic site. No evidence of the prehistoric sites was discovered during this investigations and observations in the field strongly suggested that both prehistoric sites had been entirely lost to the effects of erosion along the shores of Buffalo Bayou. Though some suggestions of historic resources were observed throughout most of the project area, none of it could be identified as anything other than modern debris dating to the early to middle twentieth century. In retrospect it is likely that the historic site was likely no more than a trash scatter, probably related to the period of use when there was a steel mill on the site in the early twentieth century. It is possible that evidence of historic and/or prehistoric sites remains beneath the deep layers of fill noted within much of the project area. However, as previously noted, an examination of these soils was outside of the scope of this investigation. Additionally the

shovel testing conducted within the tract suggests that there are no previously unrecorded sites, at least in those areas where shovel testing was possible.

Additionally, it is probable that the structural remnants observed in the wooded portion of the project area are related to a steel mill apparently constructed at the site sometime between 1905 and 1917. While it is possible that the remnants of this industrial activity may have some slight local historical importance, to determine the significance of structural remnants that clearly postdate the 19th century and have no connection to the Battle of San Jacinto is beyond the scope of this investigation.

Ultimately the limitations of the reconnaissance, combined with the extensive fill soils and prior impacts from industrial activity greatly reduced the likelihood of this investigation finding any cultural resources within the CWA tract. The result is that no recommendations regarding cultural resources as they relate to future proposed construction on or near the tract are being made by Moore Archeological Consulting, nor should any such recommendation be derived or implied by our results.⁴ A more extensive archeological investigation than that conducted herein may be necessary before any such recommendations can effectively be made.

⁴ Such recommendations were not, in fact, part of the scope of work for this project.

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APPENDIX A: Photographs

Photograph 1: Shoreline along Buffalo Bayou



Photograph 2: High tension power line ROW in project area



Photograph 3: Approximate location of previously recorded site



Photograph 4: Pipeline infrastructure within project area



Photograph 5: Concrete structural foundations in wooded part of project area.



Photograph 6: Maintenance pit (?) in project area



Photograph 7: Concrete foundation made with shell



Photograph 8: Foundation of rectangular structure.



Photograph 9: Foundation with "Aug. 19..." inscribed

APPENDIX B: Shovel Test Log

ST No.	Depth	Description	Comments
1	0-14	10yr4/1 dark gray clay, dry and hard, intact	Level 1-some modern debris
	14-30	10yr3/1 very dark gray clay, moist and firm	
	30-44	10yr5/4 yellowish brown clay, moist and very firm, with few calcium carbonate concretions	
2	0-4	humic	root disturbance
	4-11	10yr4/2 dark grayish brown fine sandy clay loam	
	11-49	10yr2/2 very dark brown clay	
3	0-8	10yr3/3 dark brown clay	Surface- white ware Level 1- glass bottle necks, glass plug, metal wire, slag
	8-14	10yr3/3 dark brown clay with shell and bone deposit	
	14-49	10yr3/3 dark brown compact clay	
4	0-50	10yr3/1 very dark gray clay, moist and firm, with few shell fragments in upper 5 cm	few bottles on surface Level 1- glass fragments, oyster shell, sheet metal fragment, ceramic fragments, animal bone, wire fragment
5	0-10	10yr4/1 dark gray fine loam	
	10-50	10yr4/1 dark gray clay	
6	0-35	10yr6/6 brownish yellow sand w/ clay deposits throughout	disturbed
7	0-48	10yr3/1 very dark gray clay, moist and very firm w/ reddish mottles	
8	0-15	10yr3/1 very dark gray loamy clay	Level 1- 1 modern glass fragment, 2 round nails
	15-50	10yr3/1 very dark gray clay, moist and firm w/ few orange mottles	
9	0-6	dark brown humic	
	6-50	10yr3/3 dark brown compact clay	
10	0-10	10yr3/3 dark brown loamy clay	
	10-45	10yr4/1 dark gray clay	
11	0-4	10yr4/1 dark gray clay, hard and dry	
	4-49	10yr4/1 dark gray clay	Level 3- glass bottle, oyster shell, Level 4- shell with mortar, glass
12	0-4	10yr4/1 dark gray clay, dry and hard	
	4-50	10yr4/1 dark gray compact clay	
13	0-50	10yr4/2 dark grayish brown compact clay	

14	0-10	10yr4/2 dark grayish brown clay, dry and hard	
	10-37	10yr3/1 very dark gray clay, moist and firm	
	37-49	10yr4/1 dark gray clay, moist and very firm	
15	0-10	10yr4/2 dark grayish brown clay w/ red mottles	disturbed
16	0-26	10yr4/2 dark grayish brown clay	
	26-47	10yr4/1 dark grayish clay	
17	0-10	10yr4/2 dark grayish brown clay	Level 2- 1 glass fragment, mortar Level 3- 1 glass fragment, mortar, Level 4- small red brick fragments (8x8cm), mortar
	10-37	10yr4/2 dark grayish brown clay	
	0-20	10yr4/2 dark grayish brown clay	
18	20-48	10yr4/1 dark gray clay, moist and very firm	Level 1- glass, round nails, brick, mortar
	0-50	10yr4/2 dark grayish brown compact clay	
19	0-13	10yr4/2 dark grayish brown clay	
20	13-47	10yr4/1 dark gray clay	